

1999: U.S. experiences second warmest year on record

For the calendar year 1999, the Commerce Department’s National Oceanic and Atmospheric Administration estimates that the United States experienced its second warmest year on record since 1900 with an average for 1999 of 55.7 degrees F. This follows 1998’s all time record of 56.4 degrees. The values for both years exceed those of the warm decade of the 1930s. 1999 is consistent with a long-term warming trend observed in the United States (0.5 degrees C per century), with a substantial portion of the warming occurring since the mid-1970s.

NOAA expects every state except California in 1999 to be above normal and 22 states from the Rockies to Maine much above normal. Numerous records for warmth were set during certain months of the year. Temperatures for November turned out to be the warmest on record. During November, eight states from the Northwest to the Great Lakes were ranked as having the warmest November on record; 39 states were ranked as much above normal. Many cities set records for the warmest temperature ever in November; one state (South Dakota) set a state record for the warmest temperature ever recorded in the state for the month. Other heat episodes occurred during February (third warmest nationally) and during July and

August, when many locations in the Ohio Valley and eastern seaboard set monthly or all-time records for heat. The heat continued into September in the Northeast, with New England states experiencing one of the warmest Septembers on record.

Global Temperatures

Global temperatures for 1999 are expected to be the fifth warmest on record since 1880, NOAA and the World Meteorological Organization reported. Globally, the departure from the long-term average (1880-1998) was 0.42 degrees C (0.76 F). Land temperatures continued near-record warmth (averaging 13.9 degrees C or 56.9 F; 0.79 degrees C or 1.42 F above the long-term average) second only to 1998, but ocean temperatures were the lowest since 1994. Just as the warm oceans associated with El Niño in 1998 contributed to the record high temperatures, the cooler ocean conditions in 1999 associated with La Niña helped to ameliorate what might otherwise have been an even warmer year. Although ocean temperatures were among the lowest of the past decade, they still averaged 15.5 degrees C (59.8 F) or 0.26 degrees C (0.47 F) above the long-term average. The new data continue to confirm that the near-surface temperatures during the 20th Century rose. A long-term temperature increase of 0.06 degrees C per decade (0.11 degrees F per decade) occurred during the 20th Century. There have been two sustained periods of warming, one beginning around 1910 and ending around 1945 (approximately 0.1 degrees C per decade), and the most recent beginning about 1976. Temperatures during the latter period of warming have increased to a rate of 0.2 degrees C per decade. This is comparable to the rates of warming

projected by the Intergovernmental Panel on Climate Change to occur during this century due to anthropogenic effects. NOAA’s values for 1999 include an estimate for global temperatures for December.

Precipitation in the United States

The United States experienced a near-normal year for precipitation, with nationally averaged precipitation of 30.60 inches, which was 1.05 inches below average. Although the national value was not unusual, there were significant regional variations. The year began on a wet note in the eastern United States; however, a dry spell that became established in April led to record-setting growing season dryness throughout the Ohio Valley and Northeast. This was the driest or second driest April-July period in all states from West Virginia to Maine. For the 12-month period from September 1998-August 1999, most of these states experienced either record or near-record dryness. The drought was followed by record-setting rainfall as two hurricanes traversed the eastern seaboard in September. States from North Carolina to Maine experienced a record or near-record wet September and numerous locations reported their heaviest 24-hour precipitation, wettest September or wettest month on record. In the Pacific Northwest, La Niña-induced precipitation produced locally heavy rainfall totals, with locations in western Washington reporting their

wettest February and wettest year on record. Cold temperatures led to a record-setting snow pack in the northern Cascades, with Mt. Baker, Wash., setting a U.S. record for the most snowfall in a snow season (1,140 inches). The snow melt from this snow pack provided sufficient irrigation for crops as the conditions in the region turned very dry in the late spring and summer seasons. Historical precipitation records for the United States show an annual increase of approximately 2.1 inches over the past 100 years.

The 1999 statistics, including regional and seasonal variations in the global pictures and global precipitation, can be found at: <http://www.ncdc.noaa.gov/annual1999.html>

This is consistent with a long-term increase of 5 to 10 percent. However, 1999 was the first year since 1989 with an annual total (30.60 inches) below the long-term average of 31.65 inches, and is the driest year since the drought year of 1988. ■

Detailed descriptions of the 20th Century events, with corresponding weather technology sidebars and reproducible photos or satellite images for the U.S. events, are available on NOAA’s Web site or by four-page fact sheet upon request to the NWS Public Affairs Office at (301) 713-0622.

NOAA releases century’s top weather, water and climate events

The nation’s climate and weather experts of the National Oceanic and Atmospheric Administration last month unveiled the top weather, water, and climate events of the 20th Century. Dozens of NOAA scientists contributed to a listing of U.S. and global storms and climate events noted for their atmospheric marvel or impact on human life. In compiling the listing, NOAA climatologists, meteorologists and hydrologists had the difficult job of selecting a few of the world’s most notable

tornadoes, floods, hurricanes, climate events and other weather phenomena that marked 20th Century weather. Some factors that were taken into consideration included an event’s magnitude, meteorological uniqueness, as well as its economic impact and death toll. Some of America’s best meteorological minds each brought a perspective based upon their area of expertise to advise on the compilation. ■

Top U.S. Weather/Water/Climate Events (no particular order)

- Galveston Hurricane, 1900
- Dust Bowl, 1930s
- Super Tornado Outbreak, 1974
- Hurricane Camille, 1969
- The Great Midwest Flood, 1993
- El Niño Episodes, 1982-83 and 1997-98
- Hurricane Andrew, 1992
- New England Hurricane, 1938
- Superstorm, 1993
- Tri-state Tornado, 1925
- Oklahoma/Kansas Tornado Outbreak, 1999
- The Great Okeechobee Hurricane and Flood, 1928
- The Storm of the Century, 1950
- Florida Keys Hurricane, 1935
- New England Blizzard, 1978

Top Global Weather/Water/Climate Events (no particular order)

- Yangtze River Flood, China, 1931
- North Vietnam Flood, 1971
- Great Iran Flood, 1954
- Bangladesh Cyclone, 1970
- Bangladesh Cyclone, 1991
- China Typhoons, 1912, 1922
- Hurricane Mitch, Honduras and Nicaragua, 1998
- Typhoon Vera, Japan, 1958
- Typhoon Thelma, Philippines, 1991
- Asian Droughts (India 1900,1907,1965-67; China 1907, 1928-30,1936,1941-42; and Soviet Union 1921-22)
- Sahel Drought, Africa, 1910-1914, 1940-44, 1970-85
- Iran Blizzard,1972
- Europe Storm Surge, 1953
- Great Smog of London, 1952
- El Niño, 1982-83